



JOINT REQUIREMENTS
OVERSIGHT COUNCIL


THE JOINT STAFF
WASHINGTON, D.C. 20318-8000

JROCM 098-98
23 September 1998

**MEMORANDUM FOR THE UNDERSECRETARY OF DEFENSE FOR
ACQUISITION AND TECHNOLOGY**

Subject: Joint Warfare System (JWARS) Key Performance Parameters (KPPs)

1. This JROCM supercedes JROCM 088-98, dated 27 August 1998, in its entirety.
2. On 17 August 1998, the Joint Requirements Oversight Council (JROC) reviewed and validated the attached JWARS key performance parameters and considers them as most essential to meet mission need. The JROC approved the Operational Requirements Document (ORD) and defined three performance levels for JWARS. Limited Initial Operational Capability (IOC) will consist of approximately 51 threads (units of work) and is expected to be completed by 1 March 2000. Full IOC will consist of approximately 72 threads (units of work) and is expected to be completed by 1 May 2001. Full Operational Capability (FOC) is expected to be completed during FY02.


JOSEPH W. RALSTON
General, USAF
JROC Chairman

Joint Warfare System (JWARS) Key Performance Parameters

System Capabilities & Characteristics

Threshold

Objective

Traceability. The ability to identify why a certain output was obtained from JWARS

a. Cause-and-Effect Relationships. Facilitate identification of cause-and-effect relationships

At each release JWARS shall allow an analyst to identify the cause-and-effect relationships needed to explain analysis.

b. Data References. Sources of data used in JWARS.

At each release JWARS shall provide a means to track the sources of data values. If user changes are made for a particular application, JWARS shall track the changes from baseline version to analytical excursions and mark output accordingly. JWARS shall also allow a global comparison of input data sets indicating, when queried, which values are changed from certified input data to excursion values.

Verification and Validation. JWARS shall demonstrate and enable the correct representation of doctrine, system and unit performance, the environment and balance among joint warfare functions for U.S. forces, Allies, coalition partners and potential adversaries.

At each release the objects and algorithms in JWARS that represent doctrine, system and unit performance, and the environment shall be verified and validated in accordance with the Verification and Validation Plan. Balance shall be maintained by equitable representation of joint warfare functions, consistent with their impact on theater warfare operations, and within the context of the functionality described at Appendix C of the ORD.

System Capabilities & Characteristics

Threshold

Objective

Utility. Study Execution, Deterministic and Stochastic Methodology, Multiple Levels of Resolution, and Run Time

a. Study Execution

(1) Release 1 (Limited IOC): JWARS shall include C4, ISR, logistics capabilities and essential functionality that exists in the current MIDAS and TACWAR models. Release 1 shall be capable of replacing the use of TACWAR to support the Force Assessment application at Appendix A of the ORD. This threshold is described by the warfare functionality at Appendix C of the ORD.

(2) Release 2 (Full IOC): JWARS shall provide balanced warfare representation to include C4, ISR, and logistics and shall be capable of supporting the Planning and Execution application and the Force Assessment application described at Appendix A of the ORD. In addition, JWARS shall be capable of replacing the legacy campaign models TACWAR and MIDAS. This threshold is described by the warfare functionality at Appendix C of the ORD.

(3) Release 3 (FOC): JWARS shall provide balanced warfare representation to include C4, ISR, and logistics and shall be capable of supporting the following applications at Appendix A of the ORD: Planning and Execution, Force Assessment, System Effectiveness and Trade-off Analysis, and Concept and Doctrine Development. In addition, JWARS shall be capable of replacing the legacy campaign models CEM, THUNDER, ITEM, and SUMMITS.

(1) Release 1: The additional warfare functionality required to meet this objective is described at Appendix C of the ORD.

(2) Release 2: The additional warfare functionality required to meet this objective is described at Appendix C of the ORD.

(3) Release 3: JWARS shall provide the functionality described by the tasks listed at Appendix B of the ORD.

System Capabilities & Characteristics

Threshold

Objective

b. Deterministic and Stochastic Methodology. The representation of the variable aspects of warfare being modeled. A deterministic methodology is essential for the planning and execution application. A stochastic methodology is essential for the force assessment application, the system effectiveness and trade-off analysis application, and the concept and doctrine development application.

At each release the user shall be able to choose from a single value, common probability distributions, or user-provided distribution for input data. Post-processing tools shall facilitate examination of distributions and correlations associated with simulation results.

c. Multiple Levels of Resolution. The capability for the user to select varying levels of aggregation: an overall system Low Resolution Mode to support time-constrained analysis across all warfare functions; user selectable higher level(s) of resolution to provide detailed analysis of selected areas of interest; and, an overall system High Resolution Mode to provide detailed analysis across all warfare functions.

(1) At release 1 and 2 a single level of resolution, balanced across all warfare functions, shall be available (see Run Time at 4b(3)(d) of the ORD).

(2) At release 3 JWARS shall provide the user a selection of Low-to-High levels of resolution, balanced across all warfare functions. The JWARS system shall identify invalid user-selected combinations of resolution.

System Capabilities & Characteristics

Threshold

Objective

d. Run Time. The time required for a single simulation run (deterministic) or replication (stochastic). The following run time requirements must be met using both deterministic and stochastic methodologies and on the hardware platforms constrained by the mobility requirements defined at 4c(2) of the ORD.

(1) At release 1 and 2 JWARS shall be able to execute a 100-day major theater of war (MTW) campaign faster than a 1000:1 speed (approximately 2.5 hours).

(2) At release 3 for System Effectiveness and Trade-off Analysis applications and Concept and Doctrine Development applications, JWARS shall be able to execute a 100-day MTW campaign faster than a 500:1 speed (approximately 5 hours). For Planning and Execution applications and Force Assessment applications, JWARS shall be able to execute a 100-day MTW campaign faster than a 1000:1 speed (approximately 2.5 hours).

At release 3 for System Effectiveness and Trade-off Analysis applications and Concept and Doctrine Development applications, JWARS shall be able to execute a 100-day MTW campaign faster than a 1000:1 speed (approximately 2.5 hours). For Planning and Execution applications and Force Assessment applications, JWARS shall be able to execute a 100-day MTW campaign faster than a 5000:1 speed (approximately .5 hours).